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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/811,401	03/20/2001	Yoshihide Yamaguchi	500.39919X00	4083

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EXAMINER

CRUZ, LOURDES C

ART UNIT PAPER NUMBER

2815

DATE MAILED: 12/13/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/811,401

Applicant(s)

YAMAGUCHI ET AL.

Examiner

Lourdes C. Cruz

Art Unit

2815

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 November 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 15 and 16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 15 and 16 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 March 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Applicant's election **without** traverse of **Claims 1-14** in Paper No. 6 is acknowledged.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "wirings are formed so that the width of the wiring in the edge portion of said relaxation layer is greater than the width in the flat portion" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: material **E** —Page 64, line 2—. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: 4a, 9(10), 33(5). A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to

the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

Claims 1,6 and 12 are objected to because of the following informalities: Claim 1, line 14 recites "said circuit electrode", "electrode" should be electrodes. Claim 6 recites "wherein coefficient" which is not grammatically correct. The same applies to claim 13 regarding "wherein thickness".

Claim 12 recites, "to make en electrical connection"

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter that the applicant regards as his invention.

Claims 1-12 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitations "the edge portion thereof", "the surface of the stress relaxation layer", "the surface of the wiring layer". **Claim 2** recites "the surrounding part". **Claims 3, 4** recite "the melting temperature T_m ". **Claim 10** recites "the width of the wiring layer", "the flat portion". **Claim 12** recites "the edge portion thereof", "the surface of the stress relaxation layer", and "the surface of the wiring layer". There is insufficient antecedent basis for these limitations in the claims.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claims 1-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Shimoishizaka et al. (US 6313532).

Shimoishizaka et al. discloses a semiconductor device comprising a semiconductor element 10 having a circuit surface on which a plurality of circuit electrodes are disposed, said circuit surface being coated with protective film 12, a stress relaxation layer 20 which is formed on the protective film 12 of the circuit surface of said semiconductor element so as to expose the circuit electrodes 11, is made of a cured thermoplastic resin and has an inclination in the edge portion thereof, a wiring layer 32 consisting of a plurality of wirings, each of said wirings being connected to one of the circuit electrodes and disposed so as to make an electrical connection from the electrodes, via the edge portion of 20 and to a desired site on the surface of 20, a surface protective film 50 which covers the surface of the wiring layer so as to expose a prescribed portion on each of the plurality of wirings on the surface of 20, and an

external connection terminal formed by connecting a bump 40 to said prescribed exposed portion of each of the plurality of wirings.

Regarding **claim 2**, see that the inclined edge has a swelling portion and a deflected portion is formed in the wiring on said swelling portion.

Regarding **claim 3**, see that the claim doesn't further structurally define the claimed structure. Instead, the claim recites a product by process limitation, which doesn't further distinguish what is claimed from the prior art, and has no patentable weight.

Regarding **claims 4- 9 and 12** see Col. 7 line 9 wherein the CTE of the stress relaxation layer is disclosed, and Col. 7, line 6 wherein the range of preferred thickness is disclosed— **Claims 7,13**—; see that not only are polyimides, polyamides, polyamide-imide, epoxies, phenolic and silicone common in the art, but also that Shimoishizaka et al. discloses such by disclosing a same CTE, which is characteristic of the claimed materials.

Regarding **claim 10**, see that the total width in the edge portion of the relaxation layer is greater than the width under a flat portion —e.g. under bump 40—, at least regarding signal wirings.

Regarding **claim 14**, see that Shimoishizaka et al. discloses a substrate mounted semiconductor.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lourdes C. Cruz whose telephone number is 703-306-5691. The examiner can normally be reached on M-F 8:00- 4:30.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on 703-308-1690. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



Lourdes Cruz
December 7, 2001

Lourdes C. Cruz
Examiner
Art Unit 2815



EDDIE LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800